

Diagnosis and Management of Foodborne Illnesses

A Primer for Physicians

Foodborne Illnesses Table: Non-infectious Agents

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American Medical Association
Centers for Disease Control and Prevention
Center for Food Safety and Applied Nutrition,
Food and Drug Administration
Food Safety and Inspection Service,
US Department of Agriculture

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Foodborne Diseases and Conditions Designated as Notifiable at the National Level – United States 2000

In the United States, requirements for reporting diseases and conditions are mandated by state and territorial laws and/or regulations. However, physicians are highly encouraged to report foodborne illness that they may encounter in the event that an outbreak situation may be present. Reporting will facilitate the tracking of the outbreak and in fact, the case identified may even be the sentinel case!

Differences exist between states and territories as to which diseases and conditions are reportable. The Council of State and Territorial Epidemiologists (CSTE) and the Centers for Disease Control and Prevention (CDC) collaborate on which diseases and conditions are designated as nationally notifiable. Details on specific state requirements are located at <http://www.cste.org/reporting%20requirements.htm>. This information is also available by contacting CSTE at:

The Council of State and Territorial Epidemiologists (CSTE)
Suite 303 – 2872 Woodcock Boulevard
Atlanta, Georgia 30341
Phone: 770 458-3811

Notifiable Bacterial Foodborne Diseases and Conditions

Botulism
Brucellosis
Cholera
Escherichia coli O157:H7
Hemolytic uremic syndrome, post-diarrheal
Salmonellosis
Shigellosis
Typhoid fever

Notifiable Viral Foodborne Diseases and Conditions

Hepatitis A

Notifiable Parasitic Foodborne Diseases and Conditions

Cryptosporidiosis
Cyclosporiasis
Trichinosis

References

Council of State and Territorial Epidemiologists. Available at:
<http://www.cste.org/reporting%20requirements.htm>.

Morbidity and Mortality Weekly Report. 1999; 48(21):447-448. Available at:
<http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/mm4821a4.htm>.

Toll-free Information Phone numbers

USDA Meat and Poultry Hotline: 800 535-4555
FDA Safe Food Hotline: 888 SAFE-FOOD (723-3366)
CDC Voice Information System: 888 CDC-FAXX (232-3299)

Foodborne Illnesses (Non-infectious)

| Etiology | Incubation Period | Signs and Symptoms | Duration of Illness | Associated Foods | Laboratory Testing | Treatment |
|---|---|--|--------------------------|---|---|---|
| Antimony | 5 min-8 hrs. usually <1 hr | Vomiting, metallic taste. | Usually self-limited | Metallic container. | Identification of metal in beverage or food. | Supportive care. |
| Arsenic | Few hrs | Vomiting, colic, diarrhea. | Several days | Contaminated food. | Urine. May cause eosinophilia. | Gastric lavage, BAL (dimercaprol). |
| Cadmium | 5 min-8 hrs. usually <1 hr | Nausea, vomiting, myalgia, increase in salivation, stomach pain. | Usually self-limited | Seafood, oysters, clams, lobster, grains, peanuts. | Identification of metal in food. | Supportive care. |
| Ciguatera fish poisoning (ciguatera toxin). | 2-6 hrs | <u>GI</u> : abdominal pain, nausea, vomiting, diarrhea. | Days to weeks to months | A variety of large reef fish. Grouper, red snapper, amberjack, and barracuda (most common). | Radioassay for toxin in fish or a consistent history. | Supportive care, IV mannitol. Children more vulnerable. |
| | 3 hrs | <u>Neurologic</u> : paresthesias, reversal of hot or cold, pain, weakness. | | | | |
| | 2-5 days | <u>Cardiovascular</u> : bradycardia, hypotension, increase in T wave abnormalities. | | | | |
| Copper | 5 min-8 hrs. usually <1 hr | Nausea, vomiting, blue or green vomitus. | Usually self-limited | Metallic container. | Identification of metal in beverage or food. | Supportive care. |
| Mercury | 1 week or longer | Numbness, weakness of legs, spastic paralysis, impaired vision, blindness, coma. Pregnant women and the developing fetus are especially vulnerable. | May be protracted | Fish exposed to organic mercury, grains treated with mercury fungicides. | Analysis of blood, hair. | Supportive care. |
| Mushroom toxins, short-acting (museinol, muscarine, psilocybin, coprius artemetaris, ibotenic acid) | <2 hrs | Vomiting, diarrhea, confusion, visual disturbance, salivation, diaphoresis, hallucinations, disulfiram-like reaction, confusion, visual disturbance. | Self-limited | Wild mushrooms (cooking may not destroy these toxins). | Typical syndrome and mushroom identified or demonstration of the toxin. | Supportive care. |
| Mushroom toxin, long-acting (amanita) | 4-8 hrs diarrhea; 24-48 hrs liver failure | Diarrhea, abdominal cramps, leading to hepatic and renal failure. | Often fatal | Mushrooms. | Typical syndrome and mushroom identified and/or demonstration of the toxin. | Supportive care; life-threatening, may need life support. |
| Nitrite poisoning | 1-2 hrs | Nausea, vomiting, cyanosis, headache, dizziness, weakness, loss of consciousness, chocolate-brown colored blood. | Usually self-limited | Cured meats, any contaminated foods, spinach exposed to excessive nitrification. | Analysis of the food, blood. | Supportive care, methylene blue. |
| Pesticides (organophosphates or carbamates) | Few min to few hrs | Nausea, vomiting, abdominal cramps, diarrhea, headache, nervousness, blurred vision, twitching, convulsions. | Usually self-limited | Any contaminated food. | Analysis of the food, blood. | Atropine. |
| Puffer fish (tetrodotoxin) | <30 min | Paresthesias, vomiting, diarrhea, abdominal pain, ascending paralysis, respiratory failure. | Death usually in 4-6 hrs | Puffer fish. | Detection of tetrodotoxin in fish. | Life-threatening, may need respiratory support. |
| Scombroid (histamine) | 1 min-3 hrs | Flushing, rash, burning sensation of skin, mouth and throat, dizziness, urticaria, paresthesias. | 3-6 hrs | <u>Fish</u> : bluefin, tuna, skipjack, mackerel, marlin, and mahi mahi. | Demonstration of histamine in food or clinical diagnosis. | Supportive care, antihistamines. |

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| Shellfish toxins (diarrheic, neurotoxic, amnesic) | Diarrheic shellfish poisoning (DSP) – 30 min to 2 hrs | Nausea, vomiting, diarrhea, and abdominal pain accompanied by chills, headache, and fever. | Hrs to 2-3 days | A variety of shellfish, primarily mussels, oysters, scallops, and shellfish from the Florida coast and the Gulf of Mexico. | Detection of the toxin in shellfish; high pressure liquid chromatography. | Supportive care, generally self-limiting. Elderly are especially sensitive to ASP. |
| | Neurotoxic shellfish poisoning (NSP) – few min to hrs | Tingling and numbness of lips, tongue, and throat, muscular aches, dizziness, reversal of the sensations of hot and cold, diarrhea, and vomiting. | | | | |
| | Amnesic shellfish poisoning (ASP) – 24-48 hrs | Vomiting, diarrhea, abdominal pain and neurological problems such as confusion, memory loss, disorienta- tion, seizure, coma. | | | | |
| Shellfish toxins (paralytic shellfish poisoning) | 30 min- 3 hrs | Diarrhea, nausea, vomiting leading to paresthesias of mouth, lips, weakness, dysphasia, dysphonia, respiratory paralysis. | Days | Scallops, mussels, clams, cockles. | Detection of toxin in food or water where fish are located; high pressure liquid chromatography. | Life-threatening, may need respiratory support. |
| Sodium fluoride | Few min to 2 hrs | Salty or soapy taste, numb- ness of mouth, vomiting, diarrhea, dilated pupils, spasms, pallor, shock, collapse. | Usually self-limited | Dry foods (such as dry milk, flour, baking powder, cake mixes) contaminated with sodium fluoride- containing insecticides and rodenticides. | Testing of vomitus or gastric washings. Analysis of the food. | Supportive care. |
| Thallium | Few hrs | Nausea, vomiting, diarrhea, painful paresthesias, motor polyneuropathy, hair loss. | Several days | Contaminated food. | Urine, hair. | Supportive care. |
| Tin | 5 min- 8 hrs. usually <1 hr | Nausea, vomiting, diarrhea. | Usually self-limited | Metallic container. | Analysis of the food. | Supportive care. |
| Vomitoxin | Few min to 3 hrs | Nausea, headache, abdominal pain, vomiting. | Usually self-limited | Grains, such as wheat, corn, barley. | Analysis of the food. | Supportive care. |
| Zinc | Few hrs | Stomach cramps, nausea, vomiting, diarrhea, myalgias. | Usually self-limited | Metallic container. | Analysis of the food, blood and feces, saliva or urine. | Supportive care. |
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Please call the state health department for more information on specific foodborne illnesses.
These telephone numbers are available at: <http://www2.cdc.gov/mmwr/international/relres.html>.

See the reverse side for information hotlines and
list of notifiable diseases.